Name:

at1113exam: Expand, factor, and solve quadratics (v215)

1. Expand the following expression into standard form.

$$(5x + 6)(2x + 9)$$

$10x^2 + 45x + 12x + 54$

$10x^2 + 57x + 54$

2. Expand the following expression into standard form.

$$(6x - 7)(6x + 7)$$

$36x^2 + 42x - 42x - 49$

$36x^2 - 49$

3. Expand the following expression into standard form.

$$(6x - 7)^2$$

$36x^2 - 42x - 42x + 49$

$36x^2 - 84x + 49$

4. Solve the equation.

$$(7x + 8)(2x + 3) = 0$$

$x = \frac{-8}{7}$ $\quad$ $x = \frac{-3}{2}$

5. Solve the equation.

$$7x^2 + 28x + 21 \;=\; 4x^2 + 2x + 5$$

$$3x^2 + 26x + 16 = 0$$
$$(3x + 2)(x + 8) = 0$$
$$x = \frac{-2}{3} \qquad x = -8$$

6. Factor the expression.

$$81x^2 - 64$$

$$(9x + 8)(9x - 8)$$

7. Solve the equation with factoring by grouping.

$$15x^2 + 18x - 10x - 12 \;=\; 0$$

$$(3x - 2)(5x + 6) = 0$$
$$x = \frac{2}{3} \qquad x = \frac{-6}{5}$$

8. Factor the expression.

$$x^2 - 7x + 10$$

$$(x - 5)(x - 2)$$